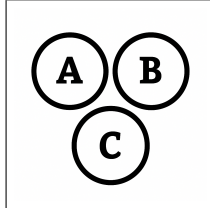


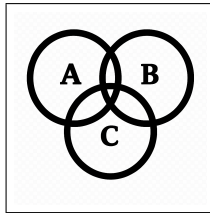
# H

## Posterior Probabilities

# H



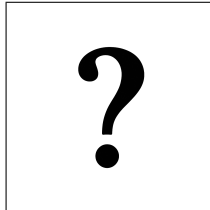
$$\begin{aligned}P(H) &= 0.30 \\P(L) &= 0.70 \\P(A|H) &= 0.40 \\P(A|L) &= 0.20\end{aligned}$$



$$\begin{aligned}P(A) &= P(A|H)P(H) + P(A|L)P(L) \\P(A) &= (0.4)(0.3) + (0.2)(0.7) = 0.12 + 0.14 = 0.26\end{aligned}$$

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$$P(H|A) = \frac{P(A|H)P(H)}{P(A)} = \frac{(0.4)(0.3)}{0.26} = \frac{0.12}{0.26} = \frac{6}{13} \approx 0.4615$$

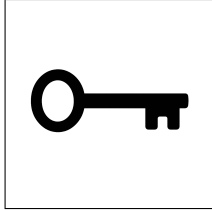


$$\begin{aligned}P(S) &= 0.50 \\P(H) &= 0.30 \\P(C) &= 0.20 \\P(I|S) &= 0.30 \\P(I|H) &= 0.10 \\P(I|C) &= 0.20 \\P(S|I) &= ?\end{aligned}$$

# H

## Posterior Probabilities

# H



$$P(S) = 0.50$$

$$P(H) = 0.30$$

$$P(C) = 0.20$$

$$P(I|S) = 0.30$$

$$P(I|H) = 0.10$$

$$P(I|C) = 0.20$$

$$P(S|I) = ?$$

---

$$\begin{aligned} P(I) &= P(I|S)P(S) + P(I|H)P(H) + P(I|C)P(C) \\ &= (0.30)(0.50) + (0.10)(0.30) + (0.20)(0.20) \\ &= 0.22 \end{aligned}$$

---

$$P(S|I) = \frac{P(I|S)P(S)}{P(I)} = \frac{(0.30)(0.50)}{0.22} = 0.68$$